AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-6 (canceled)

Claim 7 (currently amended): A method for synthesizing a polysialic acid product having alternating α2,9- and α2,8 linkages of sialic acid, said method comprising the following step ~~steps~~:

Step A: contacting a sialic acid acceptor and a CMP-sialic acid donor with released α2,8/2,9 polysialyltransferase ~~from *Escherichia coli* K92~~ under aqueous ~~cell-free~~ conditions for sequentially sialylating the sialic acid acceptor with the CMP-sialic acid donor for releasing CMP and forming the polysialic acid product; ~~and~~

wherein the released α2,8/2,9 polysialyltransferase is released into an aqueous phase

~~Step B: removing the released CMP with alkaline phosphatase~~.

Claim 8 (previously presented): A method according to claim 7 wherein the sialic acid acceptor is selected from the group consisting of sialic acid, an oligomer of sialic acid, and a ganglioside.

Claim 9 (previously presented): A method according to claim 7 wherein the sialic acid acceptor is selected from the group consisting of sialic acid, a dimer or trimer of sialic acid, 9-*O*-acetyl sialic acid, GD_3, GM_3, GD_2, GT_{1a}, GT_{1b}, GQ_{1b}, and a ganglioside mixture.

Claim 10 (new): A method according to claim 7 wherein the released α2,8/2,9 polysialyltransferase is from *Escherichia coli* K92.

Claim 11 (new): A method according to claim 7 further comprising the following step:

Step B: removing the released CMP of said Step A with alkaline phosphatase.